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Published in:
BJOG-an International Journal Of Obstetrics And Gynaecology

DOI:
[10.1111/j.1471-0528.2011.02943.x](https://doi.org/10.1111/j.1471-0528.2011.02943.x)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2011

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

van Lonkhuijzen, L., Groenewout, M., Schreuder, A., Zeeman, G., Scherpbier, A., Aukes, L., & van den Berg, P. (2011). Perceptions of women, nurses, midwives and doctors about the use of video during birth to improve quality of care: focus group discussions. *BJOG-an International Journal Of Obstetrics And Gynaecology*, 118(10), 1262-1267. <https://doi.org/10.1111/j.1471-0528.2011.02943.x>

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Perceptions of women, nurses, midwives and doctors about the use of video during birth to improve quality of care: focus group discussions

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Accepted 8 February 2011. Published Online 12 April 2011.

The use of video during birth for quality of care was discussed in focus groups with women, nurses, midwives and doctors. Qualitative analysis revealed three categories of importance. First, goals and benefits: improving quality of care, teaching, research and legal issues are important potential applications. Second, limitations: concerns for privacy, fear of feedback and use of video in case of adverse events. Third, rules and regulations: goals and

scope of the use of video need to be clearly described, access to video needs to be secured, and time until destruction needs to be specified. Video capture of birth is considered useful and seems acceptable if specific conditions are met.

Keywords Birth, focus groups, perceptions, quality of care, video.

Please cite this paper as: van Lonkhuijzen L, Groenewout M, Schreuder A, Zeeman G, Scherpbier A, Aukes L, van den Berg P. Perceptions of women, nurses, midwives and doctors about the use of video during birth to improve quality of care: focus group discussions. BJOG 2011;118:1262–1267.

Introduction

During birth, complications can occur, such as haemorrhage or eclampsia, which need immediate intervention or they might result in death. Audit results in the Netherlands and in the UK have shown that substandard care factors often play a major role in cases of maternal mortality and severe maternal morbidity.^{1,2}

Video has been used in different clinical settings to improve quality of care.^{3–6} However, the use of video in the delivery room has not been described. This might be because of the combination of particular challenges associated with video-recording women giving birth. Women in labour are usually still able to give informed consent when they enter the hospital. Women and their partners are experiencing an intimate and important life event during which both a mother and her newborn may be in danger. In these situations, multiple healthcare professionals will participate in their care. As such, emotional, legal, ethical and practical considerations pertaining to video capture in

the delivery room probably play an important role for patients and staff alike.

The purpose of this study is to investigate the attitudes of patients and healthcare providers about the use of video capture in the delivery room for quality improvement, before implementation.

This study was carried out in a single academic hospital in the north of the Netherlands. It serves as a second-tier and third-tier referral centre for the city and the three Northern provinces and has a catchment area of two million people. It is staffed by 22 obstetricians and gynaecologists, 18 junior doctors in specialist training, 12 midwives and 65 nurses. It caters to 1500 deliveries per year. Eighty percent of the women were of Dutch descent. Over the past few years, quality of care around labour and delivery has been a major issue in the Netherlands. In our hospital this has led to increased use of simulation training, audit of quality of care and weekly discussion of reported complications and near misses. The use of video and simulated patients is standard practice

during communication training of junior doctors and, on occasion, of specialists.

Methods

Focus group discussions were used to obtain qualitative in-depth information about perceived advantages and disadvantages and about the considerations that play a role when giving consent to the use of video capture. Four different focus group discussions were conducted between May 2008 and July 2008. A nonrandomised convenience sample was recruited. Each group included a nurse, a midwife, a resident and a maternal and fetal medicine specialist, all working in the Department of Obstetrics and Gynaecology. One pregnant woman and one woman who had recently experienced a difficult delivery were recruited from the outpatient clinic of the same hospital. Women with a history of a difficult delivery were identified through their hospital records and personally approached by one of the authors (MG). All women who were approached agreed to participate except for one woman postpartum who initially agreed but failed to appear for the interview. The combination of participants was chosen to represent both pregnant women and all possible members of the delivery team so as to approach the problem from as many angles as possible within each discussion group. An invitation including a brief description of the research project was sent to potential participants. All delivery room personnel at our department received this invitation letter and those interested were allowed to participate on a 'first-come-first-served' basis. Confidentiality was assured and verbal consent was obtained.

The discussions were directed by an independent psychologist/communication expert from the Department of Medical Education, trained in focus group moderation (IA), who used a list of open-ended questions (Table 1). Interview questions were generated by the investigators. Participants were asked to consider positive and negative aspects of video capture and evaluation. The interviewer

asked questions to elicit and clarify additional information and to explore the opinions that were expressed in greater detail. Discussions were held in a private conference room away from the clinical unit. Participants sat at a round table and each session lasted approximately one and a half hours. All discussions were audio-recorded and transcribed verbatim for qualitative analysis. One of the investigators observed the focus group interactions and took written notes that were used to supplement the interview transcripts. A copy of the transcript was sent to all participants to allow for possible corrections should they feel their opinions were misrepresented. After this procedure, all identifying information was removed and codes were assigned to participants signifying their background. During the discussion with the fourth group it was decided that saturation had been reached. Interpretation of the data was based on framework analysis as described by Krueger.⁷

Three authors independently coded the transcripts identifying positive, negative and neutral aspects using a qualitative software program (ATLAS-TI 5.2.18; Scientific Software Development, Berlin, Germany). Quotes were grouped under emerging categories which were compared and discussed until agreement was reached (see Table S1). The discussions were recoded independently using these categories to verify their reliability, and any discrepancies were resolved. The different categories were combined into three main categories as presented below. All interviews were conducted in Dutch. For the purpose of this report selected quotes were translated into English and then translated back by a different translator to verify the accuracy of the translation.

Results

Characteristics of the participants are summarised in Table 2. Direct observations of the groups showed that discussions took place in a friendly atmosphere, which allowed all participants to freely take part in the discussions. Three main categories emerged from the transcriptions: goals and benefits, limitations, and rules and regulations. Within these categories different opinions were identified, which are outlined below and illustrated with quotes.

Goals and benefits

When discussing the possible use of the video capture several areas of potential benefit were mentioned in all four groups. These included: quality of care, research, teaching, legal issues, and provision of patient care in general.

General quality of care aspects that were perceived as likely to improve through the use of video capture included patient safety, communication with patients and between

Table 1. List of interview questions to guide discussion

1. What do you think about being videotaped?
2. What are the reasons for you to allow the use of video?
3. For what purpose could the video be used?
4. Should the video be available to the patient?
5. If you are being videotaped what would be a circumstance in which you would want to stop the video?
6. Would you want access to the tapes yourself?
7. How long can the tapes be stored?
8. Who can have access to the tapes and who is the owner?
9. For what purpose can the tapes be used?

Table 2. Combined characteristics of participants in four focus groups

	Mean age in years (range)	Mean work experience in years (range)	Proportion with experience with video-recording
Staff			
Perinatologist	46 (35–53)	16 (9–25)	2/4
Junior doctor	32 (30–35)	6 (3–9)	1/4
Midwife	47 (27–49)	17 (2–25)	3/4
Nurse	41 (29–50)	18 (6–26)	2/4
Mothers			
Postpartum	34 (30–38)	2–4	1–2
Pregnant	36 (30–44)	2–6	2

healthcare professionals, logistical problems and guideline adherence.

All healthcare professionals mentioned video capture as a potentially important instrument for evaluation of team-work and for self-evaluation and self-reflection. In addition, in case of disagreement between colleagues, objective video images were thought able to provide a record to aid discussions afterwards:

I was once in this situation where there was a discussion outside the delivery room with a doctor about how something went. It would have been good to have had that on tape to replay it. Then I wouldn't have to go all out to prove I'm right. Nurse 4

Video capture of provided care might provide data to answer various research questions. However, it was recognised that the usefulness for this purpose would depend on the time between capture and destruction of the tapes because analysis may be time consuming.

Video feedback might be instructive for all healthcare professionals. It might give valuable insight on how to improve the process of care and to review implementation following measures for improvement of care. Video capture can allow an 'after the fact' review, identifying both problems and solutions that might have been overseen in real time.

It can make a substantial contribution to the education of medical specialists because it might give junior doctors the opportunity to discuss their performance with a supervisor who has not been physically present, for instance during the first minutes of an acute event.

Really useful for delivery room staff. What's going on exactly, where's everybody at, is there communication going

on and what's it like, how do colleagues deal with certain situations. It's educational too, to see your colleagues at work. Midwife 4

Lastly, with regard to the legal implications several advantages were mentioned. Video capture could have a positive impact in legal matters as it might exculpate the professionals in case of litigation. When discussing labour and birth at the postpartum visit the video footage may serve as a guide and offer additional information if needed. This may improve the understanding of which decisions were made and why.

I'd like there to be a tape here, for my next delivery too, if there is one. If there was a problem, you could evaluate it. Then you could do better next time. Postpartum patient 4

You can't reconstruct things based on the file notes. If you have tape of something, you can always check that. Obstetrician 4

Limitations

Several limitations of video capture were mentioned by the participants.

For women and their partners alike, the main concern was the infringement of privacy. This was expressed as the inability to speak freely when alone with the partner, the fear of being exposed in an awkward situation or a sense of 'Big brother' watching.

The main concern for the delivery room staff pivoted around the use of the video tape for the purpose of professional evaluation. Especially colleagues or supervisors viewing and criticising their clinical practice was regarded with some apprehension. In addition, observing oneself practice might be challenging. Interestingly, when professionals were asked about their views on video capture, those who had not been recorded in the past were much more prone to dislike the idea than professionals who had previously participated in any kind of training using video feedback, which suggests that once they get used to it, they will have fewer reservations.

You feel vulnerable because you know they'll be looking at how you work. Midwife 1

You're not looking your best and giving birth is very private. Postpartum patient 4

An important concern that was voiced was the use of a videotape in case of adverse events, as evidence in possible malpractice litigation. On the other hand, participants stated that it might serve to protect healthcare professionals and provide evidence of good practice, rather than errors. The main concern for the professionals appeared to be

feelings of vulnerability in possible cases of substandard care, particularly as it could become apparent to their peers and colleagues.

I wouldn't enjoy working if my colleagues were allowed to criticise my performance. Junior Doctor 4

Some additional dilemmas were identified. A patient mentioned the conflict she foresaw in case of perinatal injury or death. In such cases the presence of a videotape might be felt as a burden. Viewing the tape might be too confronting and she might feel guilty not being able to watch it. On the other hand, it was mentioned that she and her partner might need access to the tape for legal purposes.

I don't know whether I would want to know if my baby had died due to a mistake. Maybe it would be even harder to deal with if it could have been prevented. Pregnant woman 4

A concern voiced by healthcare professionals was the possible dilemma for women having to choose between participating in a research project on the important subject of patient safety and the fear of being videotaped. Professionals wanted assurance that the video footage would not be used for punitive purposes or normative assessments. Last but not least, they indicated that video-acquisition technology must be set up in such a way that the critical aspects of the situation are clearly captured. However, it was also recognised that deliberations with and between attending staff or clinical decisions are not always made within the delivery room. These discussions could take place elsewhere, such as over a telephone located outside the delivery room, but the video footage would only capture events taking place in front of the camera.

Rules and regulations

Video capture in the delivery room can produce identifiable records of both women and professionals. This raises questions around ownership and management of such data. Although participants did not always agree on the specific details, several main points could be distilled.

Most importantly, informed consent, with the purpose of the video capture clearly identified, was mentioned as something that must be obtained, preferably at an early stage, such as during the prenatal visits. All participants agreed that consent should include: the duration and location of storage and identification of the person responsible for this, all people that would have access to the recordings, an explanation of what would happen to the tapes should a participant withdraw her consent, the point at which the tapes would be destroyed, or a description of the circumstances under which they would not be destroyed. Opinions differed on the time for which the

videotapes could be stored and on whether the video should be considered as part of the medical record. The participants agreed that any intention to make stored tapes available for research purposes needed to be separately mentioned. All participants agreed that the project director was ultimately responsible for maintaining the confidentiality of the data.

Discussion and conclusion

Our study suggests that staff and patients perceive many potential benefits for the use of video in the labour room. It may support quality improvement and learning and it can serve as a data collection tool for research. A new application suggested is that patients could benefit by watching the footage afterwards to address any questions they may have. Perceived limitations revolved around privacy issues and legal concerns but these concerns could be addressed, according to the participants, by appropriate written agreements on use, storage and ownership.

Eight years ago in Plymouth, UK, 20 births were filmed to establish the work activity surrounding an individual woman's care. The films provided a rich source of information on behaviour, communication and care by midwives. They are used on a 6-monthly basis for a course at the Royal College of Obstetricians and Gynaecologists on *Behaviour on the labour ward*.⁸

Several ways are suggested in which video can contribute to quality improvement; most of these have been described before. First, with video it is possible to reveal substandard care factors that are not captured by review of the medical records. It has been successfully used to identify guideline deviations and errors in neonatal and paediatric resuscitation.^{3,4}

In obstetrics it has been used to identify management mistakes during simulation training of obstetric emergencies.^{9,10} Second, it is particularly useful to observe video records and evaluate the interaction between healthcare professionals such as communication and team cooperation. Video review of team communication during trauma resuscitation found such communication to be suboptimal in many instances and to differ during the subsequent phases of the resuscitation.⁵ It has also been used to validate a global rating scale to assess the quality of teamwork in cases of severe pre-eclampsia in a simulation centre.¹¹ More recently a set of more specific indicators was developed to help assess teamwork.¹² The third application is to provide feedback and so improve quality. Traumatology trainees who attended monthly conferences in which resuscitation efforts were evaluated with the help of selected video fragments showed more improvement in technical resuscitation efforts and in timeliness of treatment compared with trainees who did not attend.¹³ In another study,

neonatal resuscitation efforts did improve in some areas after weekly evaluation and feedback sessions were introduced.¹⁴ Another application is to help practitioners reflect on their own practice. This application has enabled clinicians to improve handover practice and information sharing in diverse situations; they successfully identified areas for improvement and developed ways to implement them.¹⁵ However, all these examples have in common the lack of consent from patients. Patients were not involved or they were unable to give consent because of altered level of consciousness.^{3–5} Also, consent was often not deemed necessary because the footage was collected in a quality assurance programme or a peer review setting.^{16,17} For general practitioners who use video in their consultation room consent rates differed considerably between studies from 27 to 97%.⁶ Consent was negatively influenced by increasing length of time to consider participation, requirement to obtain written consent, experience of distress or embarrassment for patients, the presence of mental health issues or gynaecological conditions. Our results stem from a single institution. We did not collect quantitative data on consent rates and only investigated a specific clinical setting. There is therefore no indication of how the negative factors mentioned above would influence consent rates in our setting or elsewhere. We can only speculate about the generalisability of our results. However, there is no evidence that ethnicity plays an important role in consent rates and video is successfully used in many countries.⁶ In the USA, where liability may be a barrier to video-recording of clinical care, it is recognised that videos made by family members may also provide a detailed record to defend against malpractice claims.¹⁸

Focus group discussions are a qualitative research instrument especially suitable for the study of perceptions. Participants with different background and with different roles during childbirth were brought together in one discussion group to allow for a broad range of views on the discussed topics. With regard to translation of our findings into clinical practice our study has limitations. The focus group discussions identified opinions and emotions about video capture, but how individuals will weigh benefits and limitations in reality, when presented with a consent form outlining a quality improvement initiative using video evaluation, remains to be seen. Second, in practice there will be a difference in exposure between patients and staff. Staff will be filmed more often and they will have time to get used to being taped and for the tape to be used for feedback. Patients, however, will only be filmed once during an important and intimate life event. Therefore, where staff can make a decision whether they choose to be filmed based on experience with the process, patients will need to base their decision solely on the information they receive. A third limitation is the way participants were selected.

The convenience sample based on the willingness to participate, may have selected the people that have an *a priori* positive attitude towards the use of video. However, only one participant did not agree to participate and many disadvantages and limitations were identified in the discussions. Selection bias therefore is not expected to have played a major role but we cannot exclude that some potential barriers were not discussed. Lastly, the final decision whether video capture will be introduced in the delivery room will not be determined by the perceptions of staff and patients alone. Hospital management, legislative issues and probably even the opinion of the public in general will all play a role. However, the opinion of staff and patients with regard to the rules and regulations that need to be in place will play a role in their decision to consent to the video.

Based on our results we feel that after thoughtful planning, video capture can be used as a data collection method in patient-oriented clinical research pertaining to quality of care issues in acute obstetrics.

Video capture represents an unbiased record of reality. It is objective and independent of personal interpretations. Video capture in the labour room may be an important tool for quality improvement during labour and delivery. Its introduction, however, is being hampered by fear of litigation and breach of privacy. From this study we learn that this fear may not be justified. Both patients and staff saw benefits and stated that they would probably give consent to being taped, provided appropriate attention was being paid to description of the goals and the intended use; for which a clear and detailed protocol must be in place. Further investigation of the important legal, ethical and practical details concerning limitations for use, storage and ownership of the videotapes is necessary.

Disclosure of interests

There is no conflict of interest.

Contribution to authorship

LvL developed the original concept for the study. MG, LvL, GZ and LA designed the study. MG, LvL and LA collected the data. MG, LvL and AS analysed and interpreted the data. MG wrote the first draft of the paper. AS contributed intellectual content to the analysis and interpretation of the data. MG, LvL, AS, GZ and PPvdB contributed intellectual content to the interpretation of the data. All authors have seen and approve with the final version.

Details of ethics approval

The study was exempted from approval by the Institutional Review Board, the METc, of the University Medical Centre, Groningen.

Funding

No funding was received.

Acknowledgement

None.

Supporting information

The following supplementary materials are available for this article:

Table S1. List of categories (original list in Dutch, translation was provided by the author LvL).

Additional Supporting Information may be found in the online version of this article.

Please note: Wiley-Blackwell are not responsible for the content or functionality of any supporting information supplied by the authors. Any queries (other than missing material) should be directed to the corresponding author. ■

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